

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listing, of claims in the application:

**Listing of Claims:**

1. (Currently amended): A method of preparing a composition having reduced bacterial virulence of a pathogenic bacteria, comprising:  
growing in culture medium ~~providing~~ a virulent bacteria having a DNA methyltransferase (Dam) activity; ~~and~~  
contacting the bacteria with an agent that prevents the bacteria's *dam* gene expression thereby altering the bacteria's native level of methylation of adenine in a GATC ~~tetranuclotide~~ tetranucleotide of the bacteria, and thereby reducing virulence of the bacteria[.]; and  
separating the bacteria from said culture medium and excess agent and adding to it a pharmaceutically acceptable excipient.
2. (Canceled)
3. (Previously presented): The method of claim 1, wherein the agent causes a deletion within the bacteria's *dam* gene.
4. (Canceled)
5. (Canceled)
6. (Currently amended): The method of claim 1, wherein the agent causes an insertion within the *dam* gene.
7. (Canceled)

8. (Canceled)
9. (Previously presented): The method of claim 1, wherein the agent binds a native *dam* nucleic acid sequence of the bacteria and prevents expression of a Dam gene.
10. (Canceled)
11. (Previously presented): The method of claim 1, wherein the agent alters Dam activity of a pathogenic bacteria selected from the group consisting of *Neisseria meningitidis*, *Pasteurella multocida*, and *Shigella spp.*
12. (Original): The method of claim 1, wherein the agent alters native Dam activity of a pathogenic bacteria selected from the group consisting of *Escherichia*, *Vibrio*, *Yersinia* and *Salmonella*.
13. (Previously presented): The method of claim 12, wherein the pathogenic bacteria are salmonella bacteria selected from the group consisting of *S. typhimurium*, *S. enteritidis*, *S. typhi*, *S. abortus-ovi*, *S. abortus-equi*, *S. Dublin*, *S. gallinarum*, and *S. pullorum*.
14. (Original): The method of claim 12, wherein the pathogenic bacteria are *E. coli*.
15. (Original): The method of claim 12, wherein the bacteria are *V. cholerae*.
16. (Previously presented): The method of claim 12, wherein the bacteria are *Y. pseudotuberculosis*.
17. (Previously presented): The method of claim 1, wherein the agent alters native Dam activity of a pathogenic bacteria selected from the group consisting of *Shigella*, *Haemophilus*, *Bordetella*, *Neisseria*, *Pasteurella* and *Treponema*.

18. (Original): The method of claim 1, wherein the bacteria are *Haemophilus*.

19-23. (Canceled)

24. (Currently amended): A method of treating a pathogenic bacterial infection by inhibiting proliferation of the bacteria, comprising the steps of:

administering to a subject infected with the pathogenic bacteria a therapeutically effective amount of a vaccine composition comprising a pharmaceutically acceptable ~~carrier~~ excipient and an active agent comprising ~~[[a]]~~ an attenuated bacteria which is avirulent due to having therein an alteration in a *dam* gene that alters the bacteria's native level of DNA methyltransferase (Dam) activity.

25-27. (Canceled)

28. (Previously presented): The method of claim 24, wherein the agent comprises a *dam* genetic construct that expresses Dam activity thereby increasing methylation of adenine in a GATC tetranucleotide in the bacteria, thereby inhibiting proliferation of the bacteria.

29. (Original): The method of claim 24, wherein the subject is a mammal.

30. (Original): The method of claim 24, wherein the subject is a human.

31. (Original): The method of claim 24, wherein the administering is by a route selected from the group consisting of oral, injection, inhalation and topical.

32. (Currently amended): The method of treating bacterial infection in an individual comprising administering to the individual a vaccine for producing an immune response to an immunogenic ~~[[an]]~~ attenuated bacteria having a deletion in its DNA methyltransferase gene thereby reducing methylation of adenine in a GATC tetranucleotide in the bacteria, thereby inhibiting the virulence of the bacteria~~[[.]]~~,

said vaccine comprising said immunogenic attenuated bacteria and a pharmaceutically acceptable excipient.

33-46. (Canceled)

47. (Previously presented): The method of claim 1 wherein the agent is a polynucleotide.

48. (Currently amended): A method of treating a pathogenic bacterial infection by inhibiting proliferation of the bacteria, comprising the steps of:

administering to a subject infected with the pathogenic bacteria a therapeutically effective amount of a ~~composition~~ vaccine preparation comprising a pharmaceutically acceptable ~~carrier~~ excipient and an active agent comprising a bacteria having therein an alteration in its native *dam* gene that alters the bacteria's native level of DNA methyltransferase (Dam) activity, said alteration selected from the group consisting of: an insertion in the *dam* gene; a deletion in the *dam* gene; and an additional copy of a *dam* gene for overproducing Dam methylase.

49. (Previously presented): The method of claim 47 wherein said bacteria having an alteration is selected from the group consisting of: *Escherichia*, *Vibrio*, *Yersinia* and *Salmonella*.

50. (Previously presented): The method of claim 48 wherein said bacteria having an alteration is of a different species than said pathogenic bacterial infection.

51. (New): A method of preparing a composition having reduced bacterial virulence of a pathogenic bacteria, comprising:

growing in culture medium a virulent bacteria having a DNA methyltransferase (Dam) activity;

contacting the bacteria with an agent that increases the bacteria's *dam* gene expression thereby altering the bacteria's native level of methylation of adenine in a GATC tetranucleotide of the bacteria, and thereby reducing virulence of the bacteria; and

separating the bacteria from said culture medium and any excess agent therein and adding to it a pharmaceutically acceptable excipient.